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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,363

06/03/2005

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514572002600

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25225 7590 07/13/2007  
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EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1755

MAIL DATE

DELIVERY MODE

07/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/511,363

Applicant(s)

YI ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-22 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

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Claims 1-8 and 23-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are duplicates since the process of claim 12 produces the same phosphor of claim 1. Thus claims 1 and 23 are the same. Applicant is advised that should claims 1-8 be found allowable, claims 23-27 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,674,698.

This reference teaches phosphor fluoride particles having a particle size in the range of 100-300 nm (col. 13, lines 43-46) and where the phosphors can be  $\text{YF}_3\text{:Yb-Er}$ ,  $\text{YF}_3\text{:Yb-Tm}$ ,  $\text{YF}_3\text{:Yb-Ho}$ ,  $\text{LaF}_3\text{:Yb-Er}$ ,  $\text{LaF}_3\text{:Yb-Tm}$ ,  $\text{LaF}_3\text{:Yb-Ho}$ ,  $\text{GdF}_3\text{:Yb-Er}$ ,  $\text{GdF}_3\text{:Yb-Tm}$ ,  $\text{GdF}_3\text{:Yb-Ho}$ ,  $\text{NaYF}_4\text{:Yb-Er}$ ,  $\text{NaYF}_4\text{:Yb-Ho}$  or  $\text{NaYF}_4\text{:Yb-Tm}$ . Column 16, lines 57-61 teaches formulas that fall within the composition of claims 5 and 24. Column 17, lines 45-58 teaches the phosphor particles should be uniform and indicates how these particles are produced. Column 18, lines 43-

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54 teaches the particles can be coated with a silica coating layer and column 18, line 65-60 teaches the particles can be coated with a transparent polymer which is then coated with a immobilized biological moiety. The reference teaches the claimed phosphor particles.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8, 23-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,891,361.

This reference teaches uniform rare earth fluoride phosphor particles, where the particles have a particle size of less than 1 micron. The rare earth fluoride can be yttrium, lanthanum or gadolinium fluoride and the phosphor is activated by an absorber-emitter pair, such as Yb-Er, Yb-Ho or Yb-Tm. The phosphor has the formula  $Y_{0.8}Yb_{0.2-m}Er_mF_3$ , where m is 0.01-0.02. This formula falls within that claimed. The taught particle size range encompasses the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). While example teaches a particle size of about 400 nm, a reference is not limited to the teachings in its examples. The taught range of less than 1 micron suggests the claimed range. The reference suggests the claimed phosphors.

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Claims 12-22 are allowable over the cited art of record. There is no teaching or suggestion in the cited art of record of the claimed process where a rare earth chelator is present during the co-precipitation reaction.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
July 9, 2007

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700